

AEI-CASC Engineering
Water Pollution Control Training for Construction Sites (24-Hour)

Day 1
Preventing Storm Water Pollution from Construction Site
And Proper Installation of Construction BMPs

Course Description:

The objective of this class is to give the student a knowledge base on the basics of storm water pollution, regulations and best management practices (BMPs). The introduction will include regulations and potential storm water pollutant sources and effects associated with construction activity. The history and enforcement of storm water requirements in the Clean Water Act, Porter-Cologne Water Quality Act, Caltrans and General Construction NPDES Permits will be discussed. The Caltrans guidance manuals for storm water quality will be presented and the BMP manual will be distributed to each student. The erosion and sedimentation process and appropriate methods of control will be presented. Once the potential problems of storm water pollution are presented, the use of BMPs to control erosion and sedimentation, and to prevent pollutants from entering waterways will be discussed. The students will learn the proper selection, installation, inspection, and maintenance of BMPs. Strategies for selecting appropriate BMPs and alternative and unique applications of BMPs will be presented. Post construction BMPs will be discussed.

Course Outline:

- I. Introduction and History
 - A. Definitions
 - B. Storm Water Regulations
 - C. Storm Water Pollution Sources and Effects
 - D. Recent Fines
- II. Selecting and Implementing Construction Site BMP Practices
 - A. Caltrans Storm Water Quality Handbooks and other guidance
 - B. Temporary Soil Stabilization and Sediment Control Implementation Guidance
 - C. Guidance for Implementation of Other BMPs
 - D. BMP Inspections
 - E. BMP Warm-Up Exercise
- III. Temporary Soil Stabilization BMPs
- IV. Temporary Sediment Control BMPs
- V. Wind Erosion BMPs
- VI. Tracking Control BMPs
- VII. Non-Storm Water Management BMPs
- VIII. Waste Management and Materials Pollution Control BMPs
- IX. Post Construction BMPs

DAY 2
Preparation of the SWPPP/WPCP
Understanding Caltrans Water Pollution Control Specifications and Standard Special Provisions

Course Description:

The students will review the regulations and recent fines. The roles and responsibilities of the Caltrans staff will be briefly discussed so the contractor sees how his role fits in Caltrans storm water program. The materials that need to be gathered for developing a SWPPP will be discussed as well as the Caltrans plans, specifications and contract special provisions. Tips on appointing a water pollution control manager and the pre-construction meeting will be presented. Water pollution control strategies will be reviewed and then a comprehensive presentation of the Caltrans *SWPPP and WPCP Preparation Manual* and the use of the electronic SWPPP/WPCP template will be given by walking through the instructions in the manual. The students will learn the proper preparation of a water pollution schedule, pollutant source identification, BMP selection based on Caltrans minimum BMPs and identified sources, identification of Caltrans soil stabilization and sediment control BMPs per the *Construction Site BMPs Manual*, procedures to develop water pollution control drawings, notification, certification, and inspection requirements and sampling and analysis plan requirements will be introduced. Students will conduct an exercise to make them familiar with the Caltrans minimum requirements for installing soil stabilization and sediment control BMPs specified in the BMP manual. They will conduct a group exercise to complete a water pollution control drawing.

Once the SWPPP preparation is concluded, a presentation on water pollution control programs (WPCPs) will be given. The students will learn the similarities and differences between a SWPPP and WPCP. Discussion includes recent changes and modifications. Responsibilities during construction to implement the SWPPP/WPCP will be presented including inspections, discharge reporting, annual certifications and recordkeeping. The Caltrans enforcement strategies will be presented citing standard specifications and contract special provisions.

Course Outline:

- I. Introduction and History
 - A. Regulations and Permits Review
 - B. Recent Fines
 - C. Roles and Responsibilities for Caltrans and Contractor
 - D. SWPPP Preparation materials
 - E. Water Pollution Control Strategies Review
- II. Preparing a Storm Water Pollution Prevention Plan (SWPPP)
 - A. Preparation and Approval of a SWPPP
 - 1. Schedule of Values (SWPPP Cost Breakdown)
 - 2. Conceptual SWPPP and Template
 - 3. Minimum BMP Requirements for Construction Sites
 - B. Step-by-Step walk through of the SWPPP Preparation Manual
 - 1. SWPPP Certification and Approval
 - 2. SWPPP Amendments
 - 3. Introduction and Project Description
 - 4. References

- 5. Body of the SWPPP
 - a. Objectives
 - b. Pollutant Source Identification
 - c. BMP Selection/ BMP Checklist (BMP Requirement Exercise)
 - d. Water Pollution Control Drawings (Exercise)
 - e. BMP text description
 - f. Maintenance Inspection and Repair
 - 6. Monitoring and reports
- III. Preparing a Water Pollution Control Program (WPCP)
 - A. Preparation and Approval of a WPCP
 - B. Minimum Requirements for Construction Sites
 - C. WPCP Template
- IV. Penalties for Non-Compliance
 - A. Progress Payments
 - B. Retention of Funds
 - C. Caltrans Enforcement
- V. Responsibilities During Construction and for Completion
 - A. Annual Certification
 - B. Discharge Notification
 - C. Inspections
 - D. Final Erosion Control
 - E. Recordkeeping

DAY 3
Preparation of a Sampling and Analysis Plan (SAP)
Water Quality Sampling Techniques, Reporting and Analysis of Water Quality Data
Forms, Inspection, and Estimating for Caltrans SWPPP Cost Breakdown

Course Description:

Course attendees will be given a knowledge base on regulatory requirements for monitoring and the criteria to determine when a SAP is required for a construction site. The course discusses the pollutants of concern on construction sites, and the storm water requirements that regulate them. The regulatory requirements for preparation and collection of water quality samples will be reviewed. The class will review the required elements of a SAP. Attendees will be given the tools to identify the specific pollutants that must be analyzed for on the construction site. The presentation includes detailed procedures for selecting sampling locations, collecting water quality samples and for transporting samples to the laboratory. Attendees will learn the requirements for reporting and interpreting laboratory results and taking corrective measures, if necessary.

During the second part of the day, inspection techniques will be reviewed and a mock inspection will be conducted and the class will fill out a report. Attendees will review the forms required for Caltrans water pollution control documentation. The class will actually fill out the forms with provided information including a form documenting the training they are receiving. Cost estimating for BMPs and SWPPP breakdown will be discussed.

Course Outline:

Part 1

- I. Introduction, Pollutants of Concern and Storm Water Regulations
- II. Sampling and Analysis Requirements
 - A. Direct Discharge to 303(d) Water Bodies
 - B. Non-Visually Detectable Pollutants
- III. Sampling and Analysis Plan Overview
 - A. Project Overview/Description
 - B. Monitoring Sites
 - C. Analytical Constituents
 - D. Data Quality Objectives
 - E. Field Equipment Maintenance
 - F. Monitoring Preparation and Logistics
 - G. Sample Collection, Preservation, and Delivery
 - H. Quality Assurance/Quality Control
 - I. Laboratory Sample Preparation and Analytical Methods
 - J. Data Management and Reporting Procedures

Part 2

- IV. BMP Inspection Techniques, Mock Project Inspection and Report
- V. Forms
 - A. Notice of Discharge
 - B. Training Log
 - C. Subcontractor's List and Letter
 - D. Annual Certification of Compliance
 - E. SWPPP Amendment
- VI. BMP Cost Estimating